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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/709,693

05/24/2004

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3692

27390

7590

03/18/2008

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EXAMINER

SUERETH, SARAH ELIZABETH

ART UNIT

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3749

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/709,693	Applicant(s) BECHARD, RYAN THOMAS	
	Examiner Sarah Suereth	Art Unit 3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 24,26,27,30,32 and 43-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24,26,27,30,32 and 43-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Receipt of applicant's amendment filed on 12/14/07 is acknowledged.

Drawings

2. The drawings filed December 14, 2007 are approved by the examiner. Applicant now labels reference character 43 for previously unnumbered channel shown in Figs. 4 and 6.

Specification

3. The amendment to the specification filed 11/02/2007 is entered. Previously, the specification was objected to as not providing support for the limitation that the channels are "continuous" and "unbroken". In order to clarify the record, "continuous" or "unbroken" could be interpreted as not having any beginning or end point, which is not supported in the disclosure. However, the examiner agrees that one of ordinary skill in the art would understand what is meant in the drawings by the limitation that the channels are continuous as shown in the drawings, so the previous objection is withdrawn.
4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the claim limitation that the third passageway is positioned forward of the first cavity is not supported by the specification.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 24, 26, 27, 30, 32 and 43-48** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,156,139 to Wilson Jr. ("Wilson") in view of U.S. Patent No. 2,976,918 to Leach ("Leach") and U.S. Patent No. 5,879,149 to Briggs ("Briggs").

Wilson discloses in the specification and Figs. 1-4 a method of operating an oil burner and an oil burner assembly in the same field of endeavor as applicant's invention and similar to that described in applicant's claims.

In particular, in regard to at least claims 24 and 46-48, Wilson shows an oil burner assembly having a a) manifold i) constructed of a unitary body of thermally transmissive material (see abstract), and ii) having first (22) and second (14) passageways. As shown in Fig. 2, first passageway (22) extends from inlet (22a) to outlet (22b) and forms a continuous and unbroken passageway (note flow arrows illustrated in Fig. 2 and col. 6, lines 29-31). As shown in Fig. 1, second passageway (14) is a straight, continuous, unbroken path. Wilson further shows that the first passageway (22) terminates in a first cavity (see enlarged exit cavity at left side of Fig. 2) wherein a portion of a nozzle (8) having an oil distribution port mounts in sealed

engagement to the first cavity (note nozzle 8 is necessarily sealed so that flow is ejected from the central unnumbered port, see Fig. 1). Wilson also necessarily is connected to b) a source of oil so that oil is transmitted to passageway (22).

In regard to at least claim 26, each of the passageways (22 and 14) are separated from one another and accordingly considered to be located in separate tiers/layers. Further, the undulations of passageway (22) (described also as a controlled labyrinth, see col. 6, line 60), are considered to represent the convoluted and riser portions recited.

In regard to at least claims 43-45, Wilson shows an oil burner assembly having a manifold constructed of a thermally transmissive material (see abstract), first (22), second (14), and third (16) internal passageways, and a supported nozzle (8) having an oil distribution port and an atomizing port (see at least col. 2, lines 46-52). Source of oil and pressurized air are connected to the first (22) and third (16) passageways respectively and are arranged such that the air and oil are heated by a heating element arranged in the second passageway (14) (see col. 5, lines 47-48) before being discharged from the nozzle (8) (see at least col. 6, lines 28-42). The structural arrangement of the passageways, cavities and the nozzle ports are shown as recited in applicant's claims (see at least Figs. 1 and 2, and note cavities 22B and enlarged exit cavity of 22 and nozzle port 8). Each of the passageways, 16, 22, and 14 are separated from one another and accordingly considered to be located in separate tiers/layers. Further, the undulations of passageway (22) (described also as a controlled labyrinth,

see col. 6, line 60), are considered to represent the convoluted and riser portions recited.

Additionally, note that each of the three channels (22, 14 and 16) are considered to be continuous and unbroken as recited (see at least Figs. 1 and 2 and col. 6, lines 39-33).

In regard to at least claims 43-45, the method of operating an oil burner having the method steps recited in this claims are considered substantially disclosed in the operation of the burner assembly of Wilson as noted above.

Further, in regard to claim 43, as the air atomizing nozzle (8) of Wilson appears identical to the air atomizing nozzle (2) of applicant's invention, the function of the atomizing the oil immediately upon said oil being emitted from the nozzle is considered to suggested by the nozzle of Wilson.

Wilson does not explicitly show an igniter or step of igniting, the claimed nozzle configuration, or a source of heated liquid or providing such a source to the second passageway.

In regard to the recitation of an igniter and the claimed nozzle arrangement, the nozzle of Wilson is clearly indicated to create a flame (e.g. see abstract), however, there is no detail as to what effects the creation of a flame. However, it is well understood in the art that ignition is provided for the nozzle of an oil burner via an igniter mounted adjacent the nozzle exit. Support for this assertion is found in the reference to Briggs.

Briggs teaches an oil burner assembly in the same field of endeavor as both applicant's invention and Wilson. In Briggs, the oil is ignited from a nozzle (52) via an adjacent igniter (55). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the igniter of Briggs in the burner of Wilson to desirably ignite the fuel and air mixture as it is sprayed from the nozzle (see Bender, col. 3, lines 55-60).

Regarding claims 27,30 and 32, Wilson shows the air supply passageway to the nozzle joined to the fuel conduit at a position upstream of the fuel conduit (see Figure 1). It appears by introducing the limitation "forward", applicant intends to claim that the air passageway is connected to the fuel conduit in a downstream location.

Briggs teaches an oil burner with a nozzle (52) including a fuel conduit (126) terminating in a cavity (133) joined to an air conduit (140) including a narrowed region (142) that terminates in a first cavity (132). Cavities 132 are coaxial and arranged as claimed (see Figure 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Wilson apparatus by replacing the Wilson fuel nozzle arrangement with the Briggs fuel nozzle arrangement in order to use a low cost nozzle block arrangement (col. 3, lines 10-12).

Wilson in view of Briggs, as discussed above, discloses the claimed invention except for the recitation in the claims of a source of heated liquid and step of providing the heated liquid to the second passageway. In Wilson, a passageway is shown that

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receives a heating element but does not go into further detail as to the particulars of this heating element. Leach teaches an oil burner assembly in the same field of endeavor as both applicant's invention and Wilson. Leach shows a device (10) for preheating heavy oil in a oil burning system (burner 100 and furnace 101) and method of preheating the oil that includes a body (12) made of thermally conductive material and includes an oil passageway (34, 39) and a liquid passageway (interior of housing 12) in which, heated in tank (67) is supplied via line (66). Oil passing through the oil passageways is heated in order to prevent the oil from becoming too thick to properly flow to the combustion assembly (see col. 1, lines 18-47).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the oil heating device of Wilson to incorporate a heating means that includes a heating liquid as taught in Leach to desirably provide a oil preheating device that is simple in construction and efficient in operation (see Leach, col. 1, lines 43-47). Leach specifically notes that an adjacent electrical or gas heating unit (such as what appears to be present in Wilson) has a possible disadvantage of not being able to heat the oil uniformly (see Leach, col. 1, lines 27-35). Accordingly, a person of ordinary skill in the art would reasonably modify the heating element of Wilson to include a heated liquid passageway arrangement in the passageway structure (14) of Wilson to obtain the uniform oil heating benefit that, as noted above, is recognized in the art to be simple in construction and efficient in operation.

Response to Arguments

7. Applicant's arguments and affidavits filed 12/14/07 have been fully considered but they are not persuasive.

8. The affidavit filed by Mr. Michael Dunn states that he does not believe the two devices are physically combinable due to the size of the Leach apparatus. Mr. Dunn also states that he, as one of ordinary skill in the art, would not consider using water to heat an oil burner. Also, Mr. Dunn states that burners must be certified as safe to be installed. The examiner has addressed the physical combinable and level of skill arguments below. Burner safety certification is irrelevant to the question of patentability.

9. Mr. Tim Kuhn states in his affidavit that the inventor's burners are safer, more reliable, and less dirty than the prior art, and that is the reason a patent should be granted. While these things may be true, it is not grounds for overturning the rejection. Mr. Kuhn additionally argues that the two prior art burners are not physically combinable.

10. Mr. Daniel Wiersgalla swears in his affidavit that the prior art burners are burdensome to clean, and that manufacturing the applicant's burner could not be done by a standard heating technician. The statement about a seal in the drawings is not relevant, as applicant has cancelled that from the claims. However, the features being argued are not in the claims (i.e. easy to clean and maintain), and the ease of manufacturing a product is irrelevant.

11. Applicant argues that the Wilson channels are not “continuous” in the same manner as applicant’s channels. In response, the examiner notes that Wilson Figure 2 shows oil moving in an unbroken path.

12. Applicant argues that the new limitations make the claims allowable. In response, the examiner has cited Briggs address the new limitations.

13. Applicant again argues that Wilson discloses that passageway (14) is only capable of functioning to receive an electric heater. The examiner respectfully disagrees.

In response, the examiner notes that while Wilson describes broadly the use of a “heating element,” even if such a disclosure were considered to suggest only the use of an electric heater, this is not sufficient to distinguish applicant’s invention as the examiner has relied on both Wilson and Leach to suggest the heating components of applicant’s invention. The examiner has admitted that the “heating element” of Wilson does not suggest a heated liquid passageway as claimed by applicant. However, the examiner has turned to the teachings of Leach to supply the deficiency. As noted above, Leach discloses an oil heating device in the same field of endeavor as Wilson and includes passageways that receive oil, air, and a heated liquid (water). Leach further provides a clear suggestion that the use of the liquid heated passageway is a improvement over typical prior heating arrangements that include an electric or gaseous heater to heat the oil (such as in Wilson). Applicant appears to argue that the liquid heated passageway of Leach could not be bodily incorporated into the manifold of Wilson. However, the examiner notes that the test for obviousness is not whether the

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features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, combined teaching of Wilson and Leach suggest that in an oil burner assembly a person of ordinary skill in the art would reasonably consider that a liquid heated passageway (such as a that of Leach) would be substituted for a gas or electric heating element (such as that of Wilson) to provide for uniform heating of the fuel oil.

14. Applicant also asserts that the passageway (14) of Wilson is “closed-ended.” The examiner respectfully disagrees.

In response, the examiner notes that as shown in Fig. 1 of Wilson, at least one end of passageway (14) is open in order to allow a heating device to be inserted and removed. Accordingly, passageway (14) does not have two closed ends to be regarded as “closed-ended”.

15. Applicant also again appears to argue that the oil preheating assembly of Leach only suggests a displaced liquid preheater assembly. However, in response the examiner notes that the claims have been rejected, at least in part, on the combined teachings of Wilson in view of Leach and not on Leach alone. One cannot show nonobviousness by attacking references individually where the rejections are based on

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combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In this case, the examiner considers that Wilson shows an oil burner assembly that is similar to that disclosed by applicant. As noted above, the assembly in Wilson includes a manifold with an air passageway, an oil passageway, and a passageway that receives a heating device. The heating device is specifically noted to be within the manifold/block (20) (see Wilson, col. 5, line 48) and is specifically intended to heat the air and fuel prior to reach the nozzle (8) (see Wilson, col. 6, lines 38-43). Turning to Leach, the examiner considers that the preheating assembly (10) is analogous to the manifold of Wilson in that it includes a housing (12) with an interior air passageway, oil passageway, and a heating passageway that receives a heated liquid in order to heat both the oil and air passageways (see Leach, at least col. 2, lines 28-70). The examiner considers that taken together, these references would reasonably suggest to a person of ordinary skill in the art to modify the heating element passageway of Wilson (item 14) to incorporated a liquid heating passageway as taught in Leach as the arrangement of such a liquid heating passageway in relationship to an oil and air passageway provides for a uniform heating of the oil. This uniform heating of oil provided by an interior liquid heating passageway being a recognized benefit over the use of a gas or electric heating element, such as that shown in Wilson, which causes the oil to become undesirably thick (see Leach, col. 1, lines 18-34).

16. Further, the examiner notes that applicant appears to be drawing a distinction between the term “preheater” as used in Leach and a burner assembly as asserted to

be disclosed in applicant's invention (see response, p. 15). However, review of applicant's specification reveals that applicant refers to his own assembly as a "preheater" (see the specification, at least paragraph [0045]). Accordingly, the use of their terminology in applicant's own specification belies the assertion that "preheater" and "burner assembly" connote distinct devices.

17. Applicant also argues that none of the cited references suggest the use of a heated liquid passageway. The examiner respectfully disagrees.

As noted above, Leach clearly provides that using a heated liquid, in place of a electric or gas heating device, in order to heat the oil of an oil burner is desirable (again see Leach, col. 1, lines 27-34). Further, contrary to applicant's assertion, the disclosure in Wilson that his heating device may be used in a hot water tank does not render Leach redundant. This disclosure in Wilson is regarded to support, rather than teach away from, the use of a liquid as a heating mechanism. Wilson clearly provides that when used in conjunction with a water tank the heated water would flow around all the surfaces with define all of the heat exchange volumes of the heat exchanger (i.e. including heating conduit/tube 14). To this end Wilson states:

"The controlled labyrinth heat exchanging oil nozzle assembly 10 could be mounted in a vertical or a horizontal attitude within the tank. Water need only be made to flow over or surround the surface which define all of the heat exchanger volumes of the heat exchanger..." (Wilson, col. 7, lines 1-6).

18. Accordingly, the suggestion in Wilson is that when placed in a heated water housing (such as that of Leach), the water, serving as a liquid heating means, would be

passed through or within conduit (14) thus rendering this conduit a liquid heating conduit.

19. In summary, the examiner notes that it has been held that under 35 U.S.C. § 103, a reference must be considered not only for what it expressly teaches, but also for what it fairly suggests (*In re Burckel*, 592 F.2d 1175, 1179, 201 USPQ 67, 70 (CCPA 1979); *In re Lamberti*, 545 F.2d 745, 750, 192 USPQ 278, 280 (CCPA 1976)), as well as the reasonable inferences which the artisan would logically draw from the reference. See *In re Shepard*, 319 F.2d 194, 197, 138 USPQ 148, 150 (CCPA 1963).

In this case, as described above Wilson discloses substantially all the limitations of claims with the exception of two features, an igniter and the use of passageway that receives a heated liquid in order to affect the heating of the oil of the oil burner. However, each of these deficiencies would have been reasonably and fairly suggested by the secondary references relied upon by the examiner, namely Bender and Leach. Bender clearly shows the use of an igniter, as expected, to enable ignition of the oil stream. Leach clearly provides a suggestion that the use of using a heated liquid to facilitate heating of the oil of an oil nozzle. Further, Leach expressly notes that electric or gaseous heating devices (such as that of Wilson) are desirably replaced with a heated liquid in order to uniformly heat the oil (see Leach, col. 1, lines 27-34). In doing so, a person of ordinary skill in the art would reasonably infer that the heated liquid would flow through the passageway (14) of Wilson which is expressly intended to contain the heating source. As such, while applicant's arguments have been carefully

considered, the examiner respectfully disagrees that applicant's claims are patentably distinct from the suggestions of the prior art.

Accordingly, applicant's claims are not considered to patentably distinguish applicant's invention over the prior art of record.

Conclusion

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Suereth whose telephone number is (571)272-9061. The examiner can normally be reached on Mondays & Tuesdays 8:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve McAllister, can be reached on (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sarah Suereth/

Examiner, Art Unit 3749

/Steven B. McAllister/

Supervisory Patent Examiner, Art Unit 3749